PORT EVERGLADES HARBOR
BROWARD COUNTY, FLORIDA

DRAFT FEASIBILITY REPORT
AND ENVIRONMENTAL IMPACT STATEMENT

Public Meeting, July 23, 2013

Presented by:
Stephanie Groleau and Terri Jordan-Sellers
U.S. Army Corps of Engineers
Jacksonville District

STUDY PURPOSE

- Provide for more efficient and safer transit of existing and future fleets, and meet the demands of the future fleet
- Authorized to study new depths from current 42-foot depth and widening where necessary

NP/NTB	Northport/North Turning Basin
MTB	Main Turning Basin
MP/STB	Midport/South Turning Basin
SAC	Southport Access Channel
TN	Turning Notch
IEC	Inner Entrance Channel
OEC	Outer Entrance Channel

PURPOSE OF MEETING

- Discuss <u>new</u> Tentatively Selected Plan (TSP), resulting from:
  - Modified Design
  - Minimized Environmental Impacts (since 2000)
  - Revised Ship Simulation
  - Revised Economic Analysis (since 2012)
- Obtain your input

PORT EVERGLADES SIGNIFICANCE

Current Economic Impacts

Overall
- $2.8 billion in business revenue

Cruise
- 12,300 jobs (approx)
- $1.8 billion in business revenue
- $55 million in state and local taxes

Cargo
- 15,700 jobs (approx)
- $1.0 billion in business revenue
- $673 million in state and local taxes

Logistics
- Transportation nexus (highway, rail, air) for international, national, and regional access
- Strategic location for international freight and domestic distribution

Data provided by Broward County

PORT EVERGLADES SIGNIFICANCE

- One of the three busiest cruise ship ports worldwide
- South Florida's main port for receiving petroleum products (gasoline, jet fuel, alternative fuels – serving 12 counties)
- Approximately 21 million tons of cargo moved at Port Everglades (2011)

WHAT HAS CHANGED?

Minimized potential environmental impacts:

OUTER ENTRANCE CHANNEL

- New ship simulations and geotechnical investigations provided for a reduced Outer Entrance Channel flare (1000-ft flare with side slopes to an 800-ft flare with a vertical face)
- Reduced deepening

INNER CHANNELS

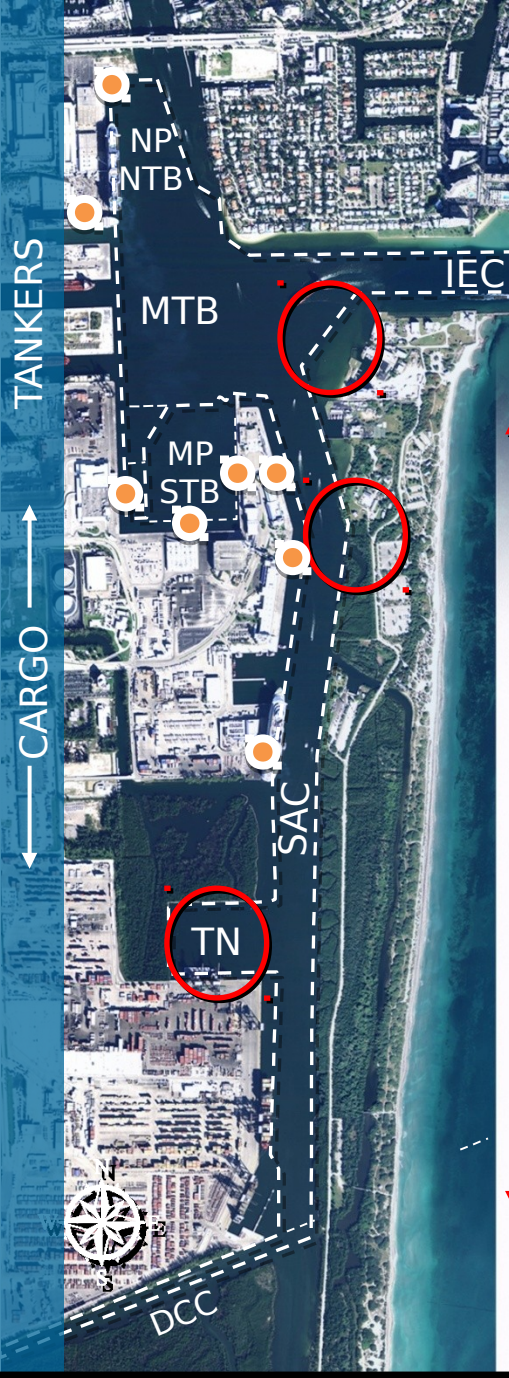
- Smaller project footprint
- Modified design: environmentally-friendly bulkheads

corals

seagrass

mangroves

EXISTING CONDITIONS
Navigation



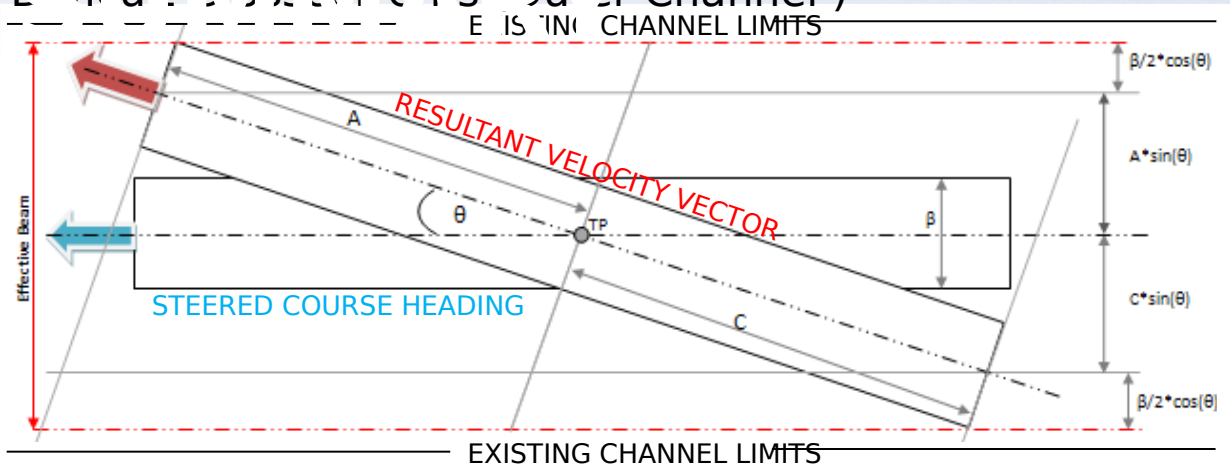
- OEC dimensions and strong unpredictable cross currents hinder entrance transit
- Shoaling in proposed widener area and location of Coast Guard facility restrict maneuverability/passing operations
- Knuckle area restricts maneuverability/passing operations
- SAC width restricts transiting past berthed cruise ships
- TN dimensions limit the size of vessels (turning and berthing)
- Depth of channels and basins constrain fully loaded vessels

= Cruise Terminals

EXISTING CONDITIONS

Safety Issues SUMMARY

Difficult Crossing (Outer Channel)

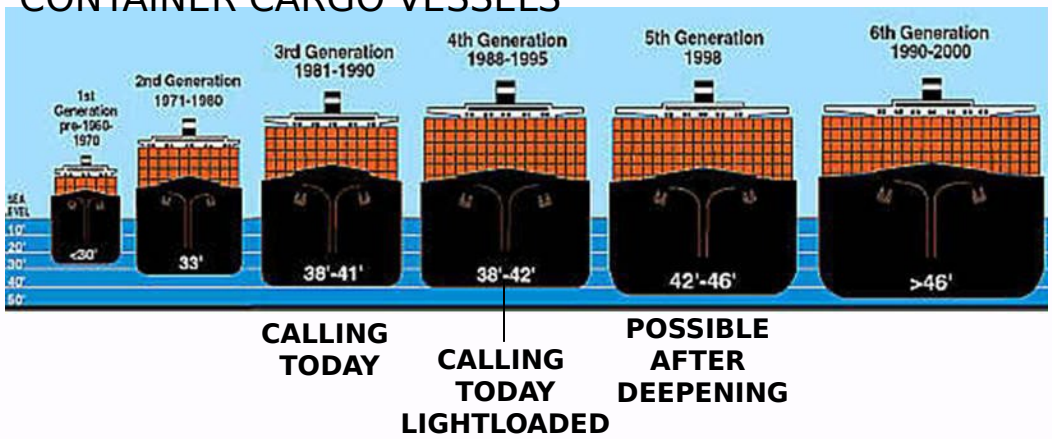


Congestion

Transportation Costs

- Navigation restrictions and delays due to safety concerns
- Depth and width constrained: containerized cargo vessels and large petroleum vessels

CONTAINER CARGO VESSELS



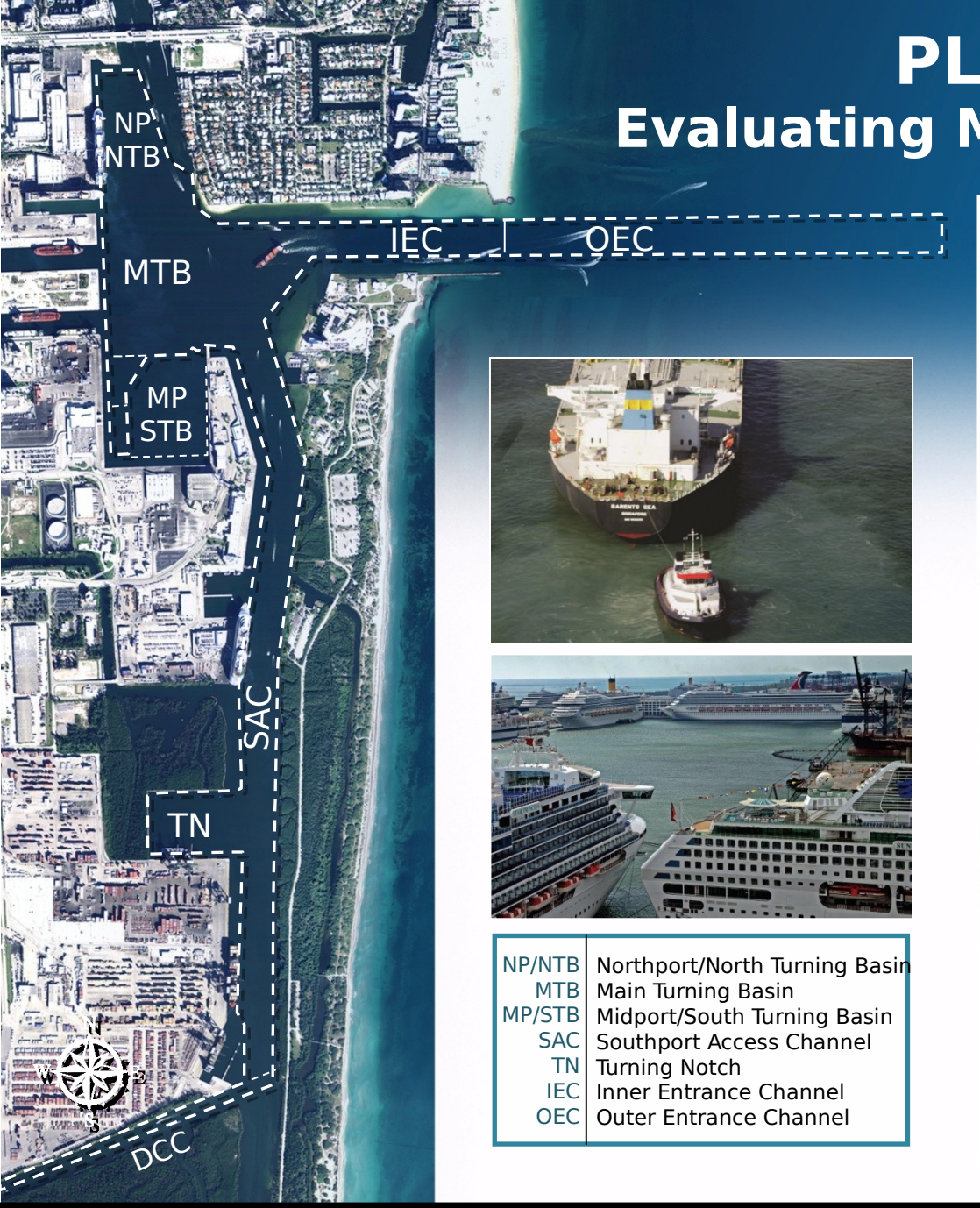
PLAN FORMULATION
Objectives

Objective 1
Decrease costs from vessel delays, channel restrictions, and berth deficiencies

Objective 2
Decrease transportation costs by increasing economies of scale for cargo and petroleum vessels

Objective 3
Increase channel safety and maneuverability for larger vessels

PLAN FORMULATION
Evaluating Measures by Objective



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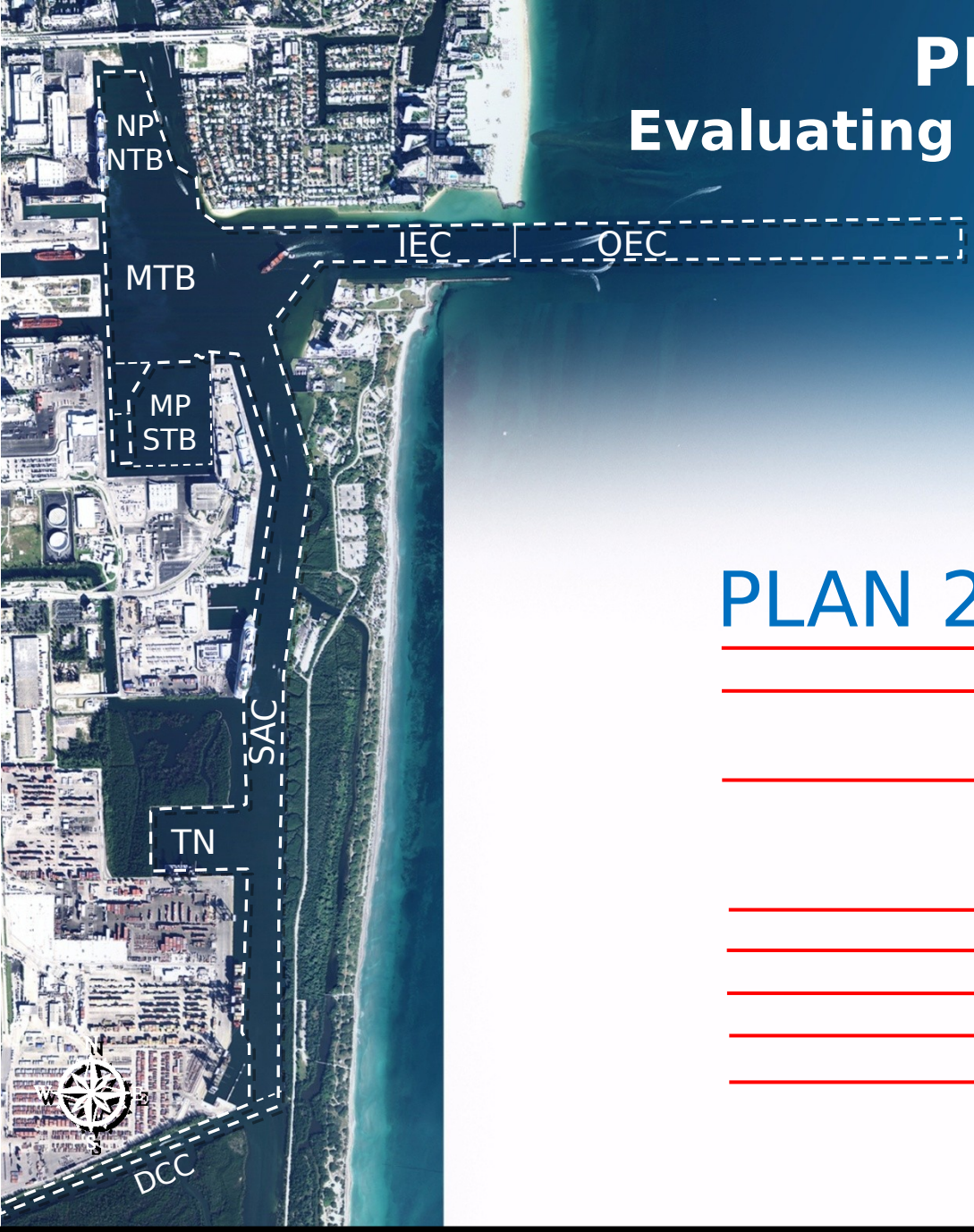
	MEASURE	One or More Objectives?
NON-STRUCTURAL	No Action	
	Additional Tugs	
	Clear Berthed Vessels	
	Trucking	Yes
	Off-loading Cargo	
	Light-loading Vessels	
	Lightering	Yes
STRUCTURAL	Off-shore Petroleum	Yes
	Widen OEC	Yes
	Deepen OEC & IEC	Yes
	Widen MTB	Yes
	Deepen MTB	Yes
	Deepen NTB	
	Deepen STB	Yes
	Widener Removal	Yes
	Widen SAC	Yes
	Deepen SAC	Yes
	Widen TN	Yes
	Deepen TN	Yes
	Dania TB	Yes
	Widen/Deepen Dania	Yes

PLAN FORMULATION
Evaluating Measures by Objective



PLAN 2

	MEASURE	One or More Objectives?
NON-STRUCTURAL	No Action	
	Additional Tugs	
	Clear Berthed Vessels	
	Trucking	Yes
	Off-loading Cargo	
	Light-loading Vessels	
	Lightering	Yes
	Off-shore Petroleum	Yes
	Widen OEC	Yes
	Deepen OEC & IEC	Yes
	Widen MTB	Yes
	Deepen MTB	Yes
	Deepen NTB	
	Deepen STB	Yes
	Widener Removal	Yes
	Widen SAC	Yes
	Deepen SAC	Yes
	Widen TN	Yes
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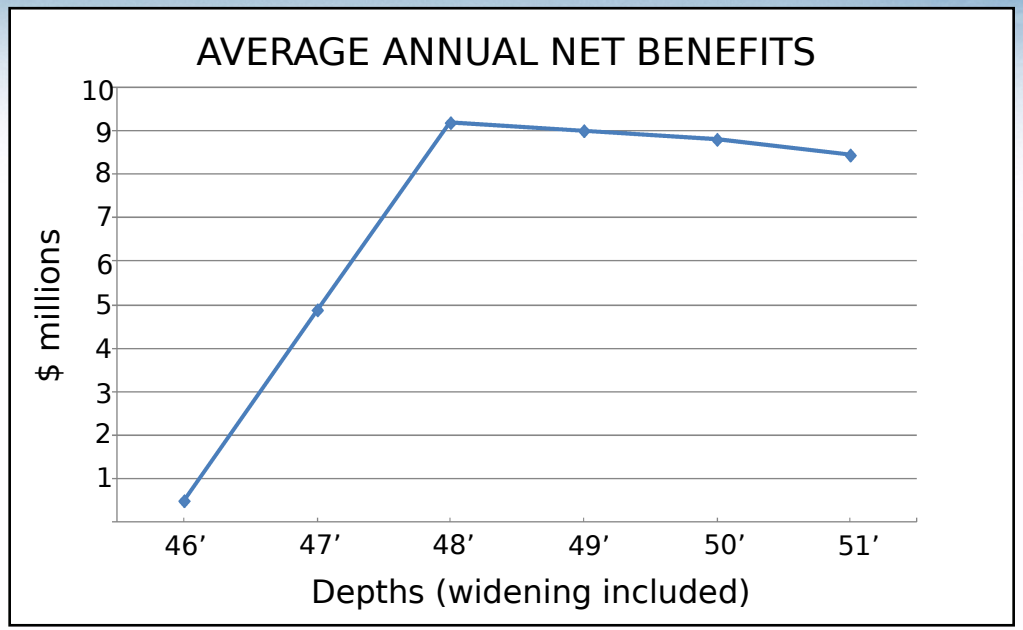
	Dania TB	Yes
	Widen/Deepen Dania	Yes

BENEFITS AND COSTS



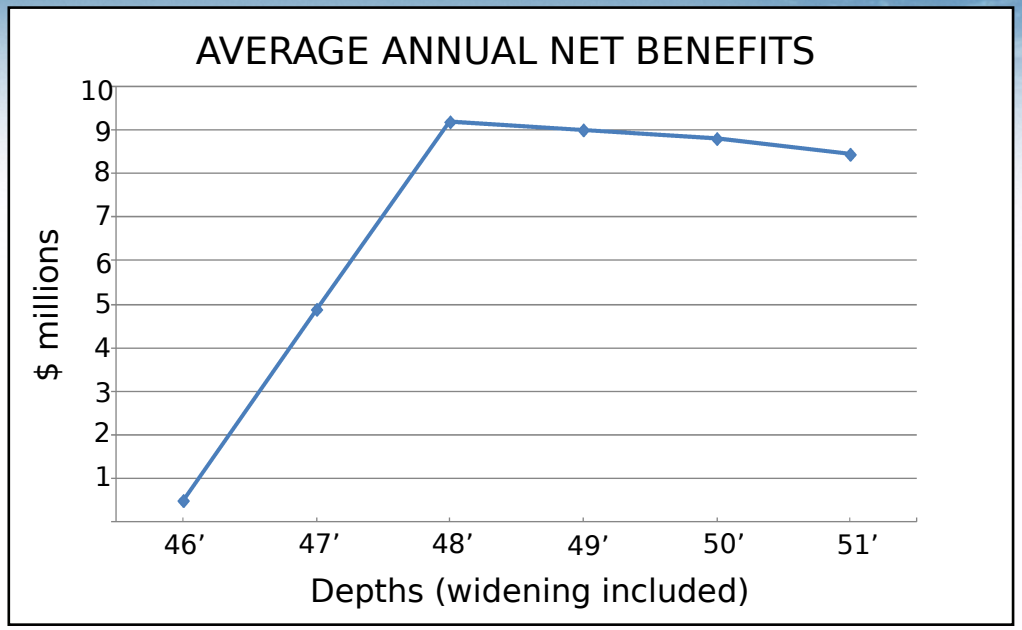
Effective Date Of Pricing: 10/01/12 and 3.75% discount rate

PROJECT (DEPTH)	48'+WIDENING
Total First Cost	$313,000,000
Total Present Value Benefits	$549,000,000
Average Annual Costs	$15,620,000
Average Annual Benefits	$24,480,000
Benefit to Cost Ratio (BCR)	1.6

Tentatively Selected Plan:

48-foot Depth Plus Widening

BENEFITS AND COSTS

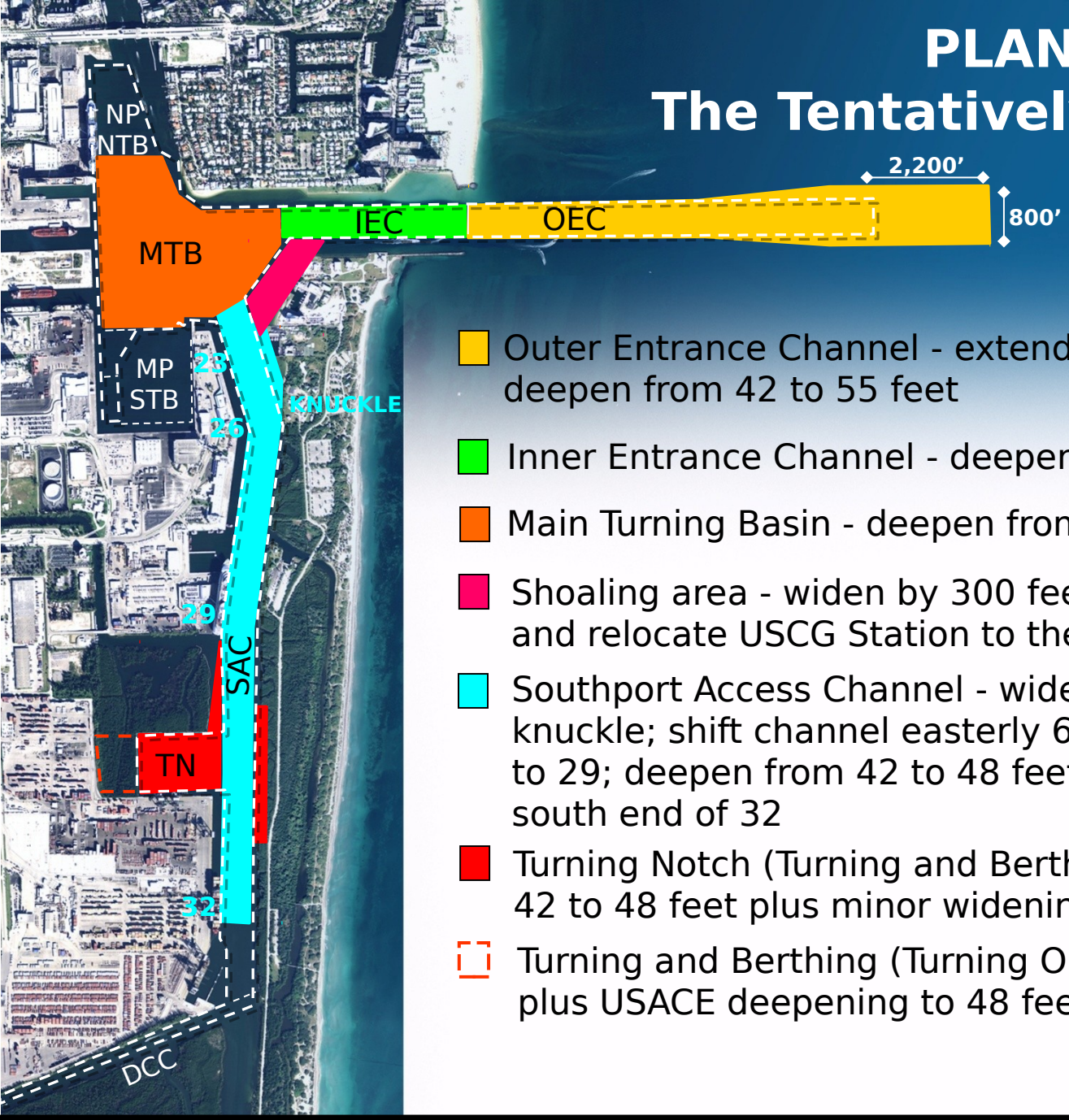


Tentatively Selected Plan:
48-foot Depth
Plus Widening

Effective Date Of Pricing: 10/01/12 and 3.75% discount rate

Project (Depth)	46'+Widening	47'+Widening	48'+Widening	49'+Widening	50'+Widening	51'+Widening
Total First Cost	$285,000,000	$299,000,000	$313,000,000	$326,500,000	$340,000,000	$353,500,000
Total Present Value Benefits	$341,000,000	$445,000,000	$549,000,000	$550,000,000	$550,000,000	$550,000,000
Average Annual Costs	$14,000,000	$14,800,000	$15,620,000	$16,430,000	$17,260,000	$18,100,000
Average Annual Benefits	$15,210,000	$19,840,000	$24,480,000	$24,500,000	$24,510,000	$24,520,000
Benefit to Cost Ratio (BCR)	1.09	1.3	1.6	1.5	1.4	1.4

PLAN FORMULATION
The Tentatively Selected Plan



- Outer Entrance Channel - extend, widen, and deepen from 42 to 55 feet
- Inner Entrance Channel - deepen from 42 to 48 feet
- Main Turning Basin - deepen from 42 to 48 feet
- Shoaling area - widen by 300 feet, deepen to 48 feet; and relocate USCG Station to the east
- Southport Access Channel - widen by 250 feet at the knuckle; shift channel easterly 65 feet from berth 26 to 29; deepen from 42 to 48 feet from berth 23 to south end of 32
- Turning Notch (Turning and Berthing) - deepen from 42 to 48 feet plus minor widening features
- Turning and Berthing (Turning Only) - Port expansion plus USACE deepening to 48 feet

THE TENTATIVELY SELECTED PLAN
Total Project Costs

(Effective Date of Pricing: FY 13 and 3.75% discount rate)

Port Everglades	Cost
Estimated Federal Project Cost	$183,766,000
Estimated Non-Federal Project & Associated Costs	$127,706,000
Utility Relocations	$1,133,000
Total Project Cost	**$313,000,000**
Total AAEQ Costs	$15,620,000
AAEQ Benefits	$24,820,000
B/C Ratio	**1.6**

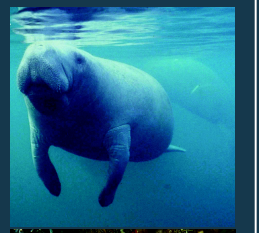
ENVIRONMENTAL RESOURCES

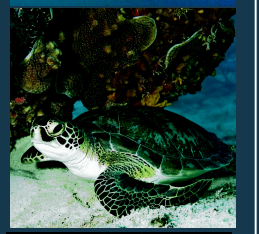
Habitat
(approximate locations)

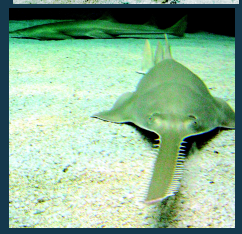
- Hardbottom Pavement
- Reef (linear)
- Reef (spur and groove)
- Seagrass (Johnson's)
- Seagrass (Mixed with Johnson's)
- Paddle Grass
- Mangrove
- Upland/developed land

Threatened/Endangered Species

- Johnsons Seagrass
- West indian manatee
- Loggerhead, green, leatherback, Kemp's ridley and hawksbill sea turtles
- Smalltooth sawfish
- Coral Species
- American Crocodile

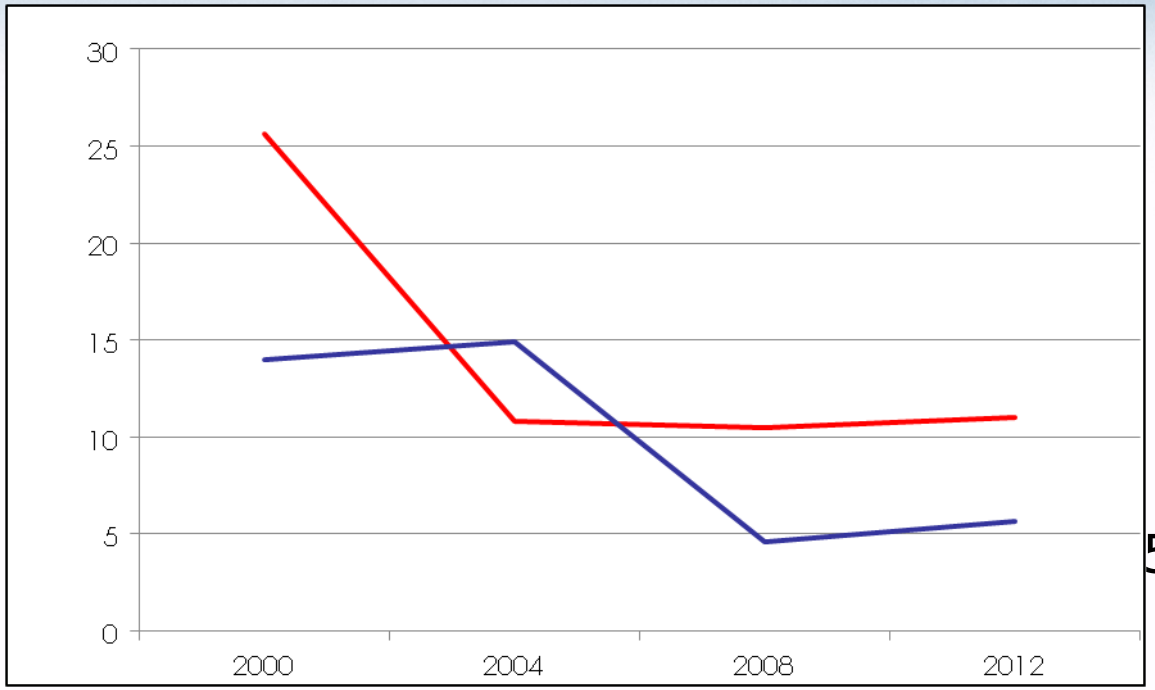






IMPACT REDUCTIONS: 2000 - 2013

Reef and Hardbottom



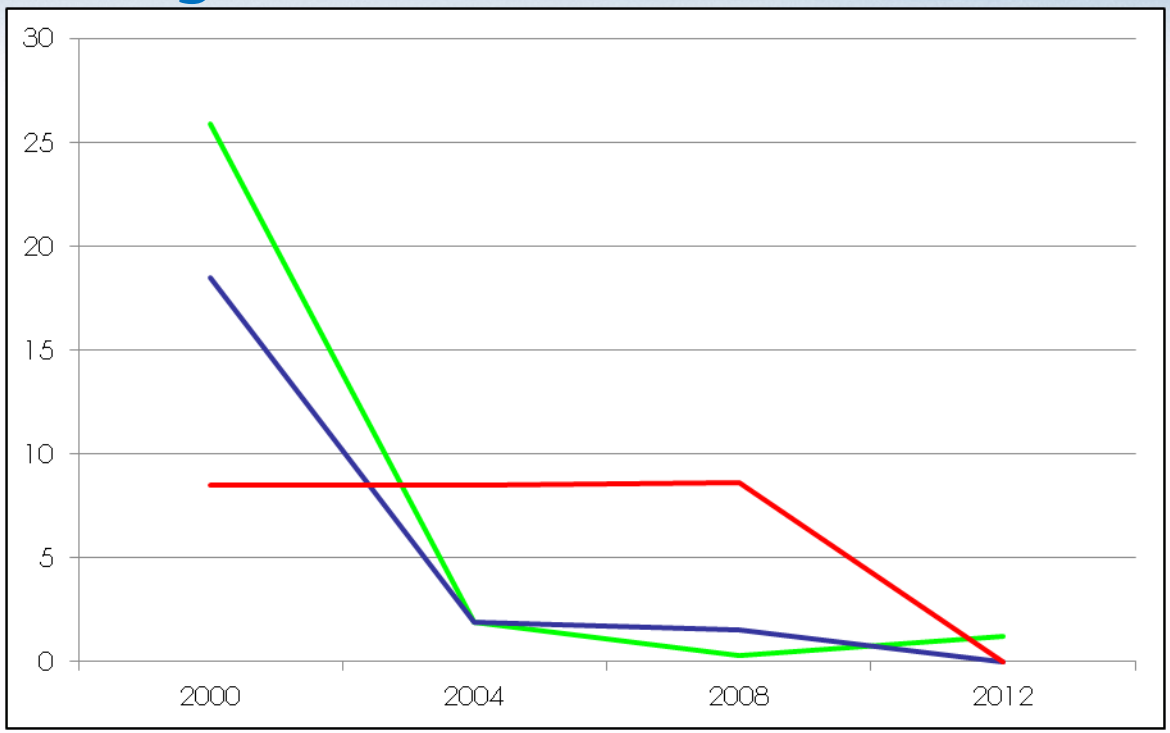
58% reduction in impacts

Outer Entrance Channel (OEC) High Relief: Net Change -15.5 acres
(Linear, Spur/Groove, Ridge)

Outer Entrance Channel (OEC) Low Relief: Net Change -8.9 acres
(Pavement, Rubble)

SUMMARY OF CHANGES: 2000 to 2013

Mangroves



98% reduction in impacts

- Southport Access Channel: Net Change -24.7 acres
- Dania Cutoff Canal: Net Change -18.5 acres
- Turning Notch: Net Change -8.6 acres

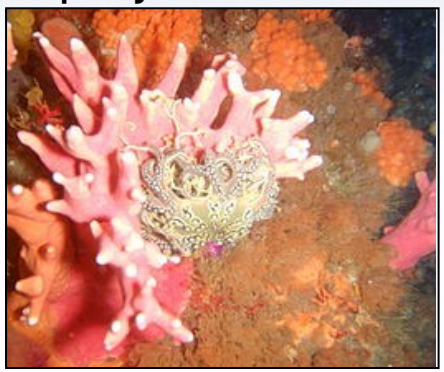
MITIGATION ALTERNATIVES AND MEASURES (2013)

- Reefs and hardbottoms
  - Artificial Reef Construction
  - Port Everglades Reef Group
- Mangroves and seagrass
  - West Lake Park
    - ✓ Work in kind
    - ✓ Permits issued by SFWMD and USACE-RD for Port/Airport projects (construction underway)
    - ✓ Cost share dollar requirement
    - ✓ Most cost effective (compared to seagrass creation in Dade or Palm Beach Counties
- John U. Lloyd Beach State Park
- Protected species measures
- Construction methods (BMPs) and designs (e.g., bulkhead)

PROPOSED MITIGATION – ENTRANCE CHANNEL

- Corps worked with an interagency/inter disciplinary team, and continues to coordinate with agencies to prepare a list of potential mitigation options for the entrance channel portion of the project:

Removal of tires between the 2nd and 3rd reef line



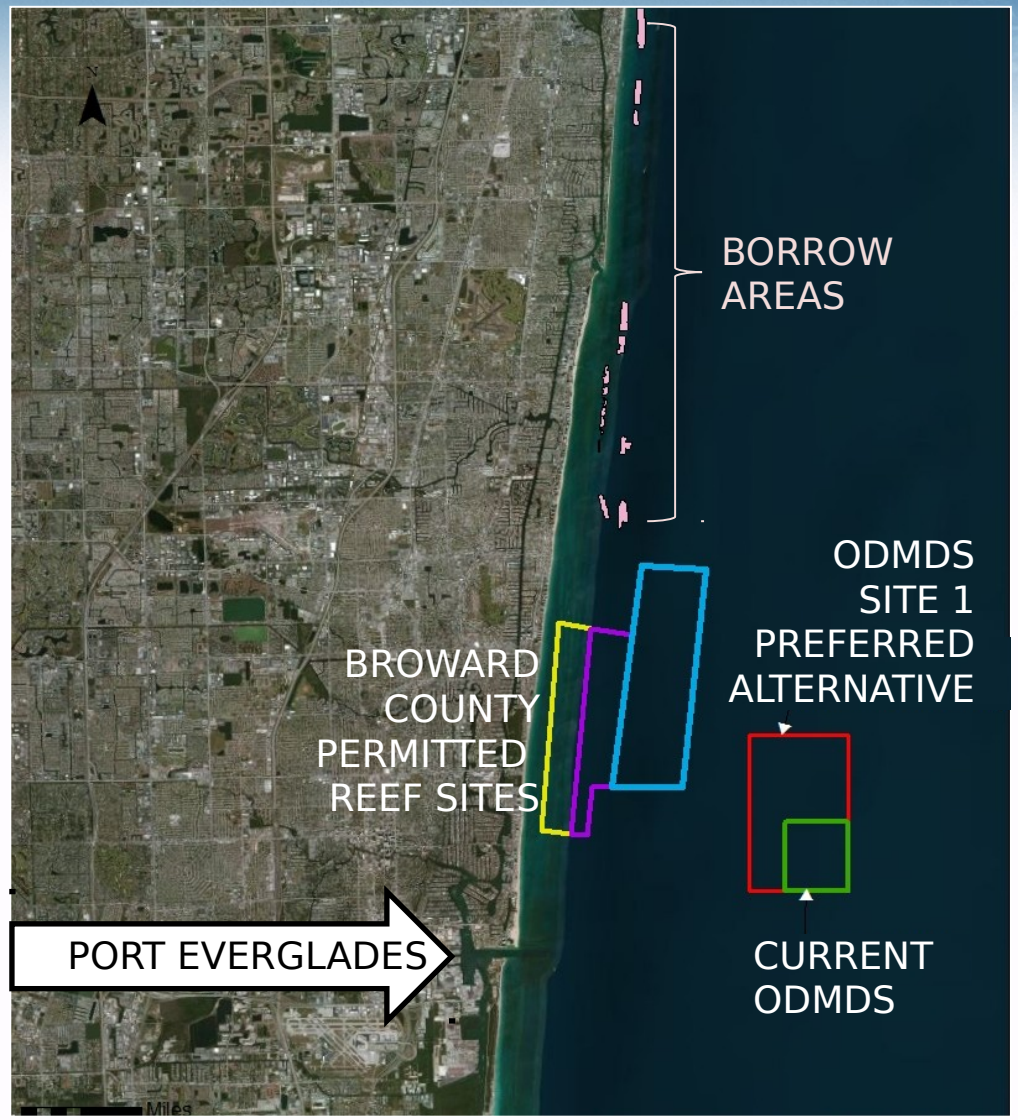
Coral translocation from impact site and placement at orphan grounding sites after repair of orphan sites (6 sites off Ft. Lauderdale)

Artificial reef creation (note: current option in EIS/Mitigation Plan/ICA)

Water quality improvements

- Alternatives being reviewed and feasible options have been incorporated into the EIS for review

PLACEMENT OPTIONS



- Majority of the material will be placed in Ocean Dredged Material Disposal Site (ODMDS)
- When possible, suitable material may be used to create artificial reefs
  - Fill in previously used borrow areas
  - Existing sites permitted by Broward County

NEXT STEPS

- Need <u>your</u> input
- Report is undergoing legal, policy and external technical review
- All comments will be addressed during the review of the Final Report (projected dates below*)

FOR MORE INFORMATION

- Report Access:
  http://www.saj.usace.army.mil/Missions/CivilWorks/Navigation/NavigationProjects/PortEverglades.aspx

- Comments:

  Email: Terri.Jordan-Sellers@usace.army.mil

  Address:
  U.S. Army Corps of Engineers, Jacksonville District
  701 San Marco Blvd
  Jacksonville, Florida 32207-8175
  Attention: Terri Jordan-Sellers

- Due Date for Comments: August 13, 2013